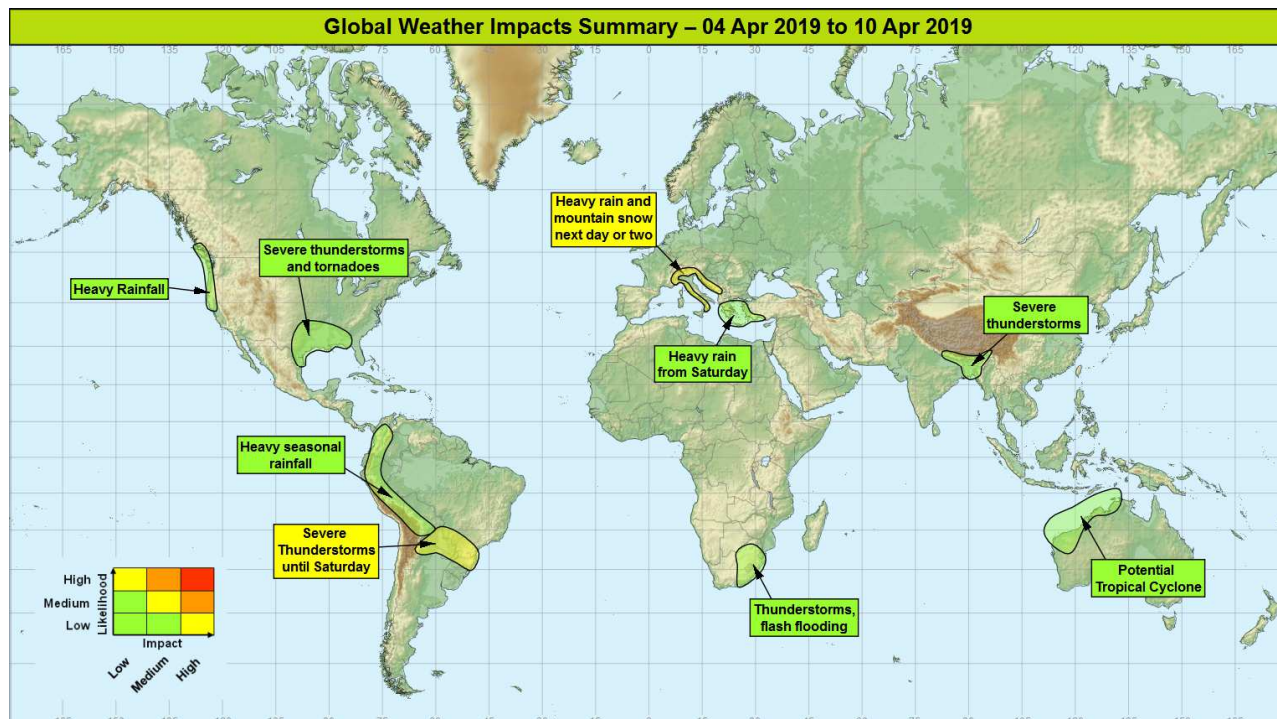


## Global Weather Impacts – Thursday 4<sup>th</sup> April to Wednesday 10<sup>th</sup> April 2019

Issued on Thursday 4<sup>th</sup> April 2019

### HEADLINES

- Rain and mountain snow affecting Italy, the Alps, and the Balkans through the next day or two.
- Heavy rain and severe thunderstorms bringing flooding from Colombia to southeast Brazil.
- Severe thunderstorms likely across parts of the USA and South Asia.



### DISCUSSION

#### Tropical Cyclones

There are presently no active tropical cyclones.

#### The following area is being monitored for potential tropical cyclone formation:

##### Northern Australia (Timor Sea)

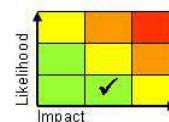
#### Weather

A tropical low has developed around 150 miles north of Darwin. The system is expected to track broadly west to southwest over the next few days, likely continuing to strengthen and becoming a tropical storm. There is now higher confidence in the track, and still the possibility of this system making landfall, or at least passing close enough to produce some heavy rain and very strong winds to coastal districts of north-western Australia.

#### Discussion

Most deterministic models indicate the system will strengthen into a tropical cyclone while crossing the warm waters of the northern Timor Sea. There has been increasing agreement in the track of this system during the past 24 hours, with the system possibly ending up taking a similar track to Veronica a week or so ago.

#### Expected Impacts



**This forecast may be amended at any time**

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Potential for flash flooding to bring travel disruption and damage to property. In addition, should a strong tropical cyclone develop, wind damage would be expected, with damage to buildings and interruptions to power supplies potential impacts. This area however is sparsely populated and used to tropical cyclones, with impacts likely to be relatively low.

## Europe

### Much of Italy, Switzerland and the western Balkans

#### **Weather**

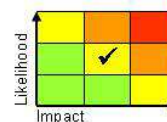
Heavy rain and mountain snow will continue to affect this region from through the next day or two. The heaviest precipitation is expected to fall on the southern side of the Alps today, where a further 150 mm of rain could fall (in addition to the 50-100 mm of rain that has already accumulated). At higher elevations of the Alps significant falls of snow (perhaps up to 1.5 metres) above 1200 metres above sea level are possible in the Swiss and Italian Alps. Parts of the Swiss Alps could see up to half a metre of fresh snow down to 800 metres above sea level today.

#### **Discussion**

A cold front moved southeast across western Europe on Wednesday, becoming increasingly active as an upper trough extended and disrupted. A high WBPT plume was drawn up ahead of the cold front, with this, along with the upper forcing producing very heavy precipitation along the southern facing slopes of the Alps. The exact amount of snowfall will be difficult to estimate due to differences in the WBFL within the heavy precipitation plume. Heavy showers blossoming within the plume will bring heavy, thundery showers to the western side of Italy, and later the Dinaric Alps as the system progresses E, where higher WBFL will see most ppn realised as rain.

#### **Expected Impacts**

Surface water flooding is possible in low-lying areas, with deep fresh snow leading to a threat of avalanche at higher levels. The combination of flooding and heavy snowfall at higher elevations is likely to lead to disruption to travel in the region, risk to property and infrastructure, and danger to life.



### Greece, southern Balkans and southwest Turkey

#### **Weather**

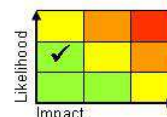
An areas of very heavy rainfall and some thunderstorms will spread east across this region over the weekend, with showers then continuing to affect the region in the early part of next week. The rain over the weekend could bring spot accumulations as high as 100 mm in some locations, with showers next week able to locally bring a further 10-20 mm each day. Precipitation will fall as snow over the regions mountains (above 1800 metres elevation)

#### **Discussion**

The cold front that is bringing unsettled weather to parts of the Alps, Italy and Balkans will continue southeast and cross this region through the weekend, where it will be re-enforced by a depression running east across the central Mediterranean. A strong southeasterly wind in the warm conveyor ahead of the cold front, will lead to some marked orographic enhancement of rainfall across southeast facing hills.

#### **Expected Impacts**

Small chance of flash flooding causing disruption to travel and damage to property. Landsides could potentially be triggered in the mountainous terrain, with snow related hazards such as avalanche possible at greater elevations. Thunderstorms/lightning may trigger some localised disruption. Strong winds may impact marine transport through the central Mediterranean.



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**North America****Southern USA and northeast Mexico****Weather**

Heavy showers and potentially severe thunderstorms are possible across southern parts of the USA, with an initial peak today (Thursday), before further events are signalled through the weekend and early next week. Intense downpours of rain could bring as much as 50-100 mm in places in a few hours. Large hail, strong wind gusts and tornadic outbreaks will be additional localised hazards.

**Discussion**

Various short and longwave upper troughs transferring east across southern parts of the USA looks likely to engage plumes of high WBPT air drawn north from the Gulf of Mexico. This combination is likely to trigger outbreaks of severe convection, although the locations at risk are still the subject of some uncertainty.

**Expected Impacts**

Increased potential for flash flooding. Large hail and/or strong winds could cause damage to structures and vehicles. There is a risk some tornadic activity being spawned during these events which would bring with it a danger to life. Some disruption to transport, particularly aviation (including transiting flights).

**Western USA and south-western Canada****Weather**

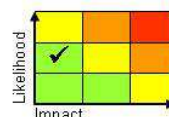
A series of weather systems will affect this region over the next week, bringing heavy rainfall and mountain snow. The most potent system looks likely to arrive over the weekend, perhaps producing more than 100 mm in 24 hours to a large swathe of the region. Some locations could see more than 200 mm of rainfall through the period.

**Discussion**

A strong jet stream across the Pacific will be the main driver for this event, with various shortwave features engaging the baroclinic zone, and driving frontal waves into the region.

**Expected Impacts**

Although the Pacific North-West and south western Canada are used to rainfall like this, it's likely that it will again affect areas of the western USA, mainly central and northern California, where flooding has already caused significant impacts earlier this year. These areas in particular may be vulnerable to further flood impacts.

**Central America and Caribbean**

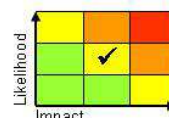
Nil significant.

**South America****Northern Argentina, Paraguay, far south of Brazil****Weather**

Heavy showers and severe thunderstorms are expected to develop across this region until Saturday. Each day in the worst affected areas as much as 75-100 mm of rain could fall which is roughly equivalent to a month's worth of rainfall. Depending on the exact location of where the most severe thunderstorms develop, 150-200 mm of rain is possible over a few days. Lightning, large hail and strong gusty winds associated with thunderstorms will be additional hazards. Over the weekend more benign weather is forecast in this region as storms both weaken and edge away to the northeast.

**Discussion**

An extrusion of the tropical air is being engaged by a succession of troughs in the subtropical jet extending over central parts of South America. This will aid the development of organised severe thunderstorms including the likelihood of MCSs. Through the weekend a final upper trough will force the formation of a surface depression (offshore from the River Plate), with this acting to drive a cold front northeast and displace the tropical air from this region.

**Expected Impacts**

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Very heavy rainfall increases the chances of flash flooding as well as landslides in more mountainous terrain disrupting transport, flooding property and posing a danger to life. Parts of Paraguay could be more sensitive than usual with reports of flooding during March. Over the last 30 days a large proportion of Paraguay and parts of northern Argentina have seen more than double of their average rainfall. Lightning strikes, large hail and the potential for tornadoes will pose additional risks to lives and infrastructure.

## **Colombia, Ecuador, Peru and Bolivia**

### **Weather**

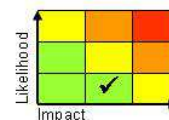
Heavy showers and thunderstorms are expected to initially be more numerous than normal along the northern Andes. Rainfall accumulations will vary by location due to the showery nature of the rainfall but locally a further 200-300 mm of rain is possible in a few locations over the next few days, perhaps the heaviest falls affecting parts of Peru and Ecuador. From the weekend shower activity is forecast to become much reduced in the south, with much of Peru and Bolivia expected to see drier than average conditions.

### **Discussion**

Abundant tropical moisture exists across the northern Andes to generate further heavy showers and thunderstorms. The cold front mentioned in the previous section will displace the tropical air northwards later this week, with the result being much reduced shower activity across much of Peru and Bolivia.

### **Expected Impacts**

Flash flooding and landslides remain an ongoing threat in the mountainous areas, as well as downstream river flooding, with numerous reports of significant impacts in these countries again surfacing in recent days. With much of this region preconditioned by previous rainfall, further rain will produce some additional impacts.



## **Africa**

### **Eastern South Africa, Lesotho and Swaziland**

### **Weather**

Through the next 5 or 5 days a spell of enhanced heavy showers and severe thunderstorms are expected to form in this region, with these showers generally tied to a diurnal cycle with activity peaking in the late afternoon and early evening. These storms have the potential to locally bring 50-75 mm of rain in a short space of time, with the additional hazards of strong gusty winds, large hail and frequent lightning.

### **Discussion**

A southward extrusion of the African monsoon plume looks likely to be engaged by a frequently re-enforced upper level cyclonic pattern, leading to significant and organised destabilisation. Forecast profiles highlight large CAPE and strong shear, with the potential for long lived storms to develop, whilst high precipitable water (PWAT) will allow high rainfall rates and locally large totals.

### **Expected Impacts**

Flash flooding is the most likely hazard, with many large urban areas within this region (eg Johannesburg, Bloemfontein and Durban) particularly vulnerable. Many regions will miss the storms altogether however. Additional hazards are the likelihood of strong winds, and large hail, and frequent lightning all of which could bring some localised damage to people property, and infrastructure (such as utilities).



## **Middle East**

Nil.

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**Asia****Bangladesh, northeast India, and eastern Nepal****Weather**

There is an increased likelihood of severe thunderstorms developing across this region during the next week, which as well as producing large amounts of rainfall (50-100 mm) in a short space of time, will bring frequent lightning and a risk of, strong winds, large hail and a few tornadoes.

**Discussion**

We are approaching peak tornado season across this part of the world, and with very warm moist air in place at low levels, an elevated mixed layer at medium levels and various upper troughs in the sub-tropical jet (that remains close to the area). At times forecast profiles exhibit large amounts of CAPE and strong shear, strong outflow aloft and potential for supercells and tornadoes. Last Sunday a severe storm in this region injured hundreds of people and caused multiple fatalities as it moved through Nepal, with poorly constructed buildings an aggravating factor.

**Expected Impacts**

Flash flooding is likely, along with lightning/large hail/strong gusty winds/isolated tornadoes causing a risk to life, plus damage to property and infrastructure.

**Australasia**

**Northern Australia** – See *Tropical Cyclones* section.

**Additional information**

Nil.

**Issued at:** 040640UTC    **Meteorologist:** Mark Sidaway / Paul Hutcheon

**Global Guidance Unit**

**This forecast may be amended at any time**

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